-- REMARKS --

The present amendment replies to a Final Office Action dated October 16, 2006. Claims 1-10 are pending in the present application. Claim 1 has been amended and claims 11-14 added herein. In the Final Office Action, the Examiner rejected pending claims 1-10 on various grounds. The Applicants respond to each ground of rejection as subsequently recited herein and respectfully request reconsideration of the present application.

35 U.S.C. §102 & §103

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the . . . claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Thus, to warrant the §102(a or e) rejection, the references cited by the Examiner must show each and every limitation of the claims in complete detail. The Applicants respectfully assert that the cited reference fails to do so.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Non-Finally, the prior art references when combined must teach or suggest all the claim limitations. *See* MPEP 2143. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). *See* MPEP 2143.03. The Applicant respectfully asserts that the cited references fail to teach or suggest all the claim limitations.

A. Claims 1-9 were rejected under 35 U.S.C. §102(a or e) as being anticipated by or, in the alterative, under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,417,127 to Yamamoto, *et al.* (the *Yamamoto* patent).

The Applicants respectfully assert that the *Yamamoto* patent fails to teach or suggest all the claim limitations. The *Yamamoto* patent fails to disclose, teach, or suggest polycrystalline alumina components that contain a concentration from 0.1 to 0.5 wt-% ZrO_2 inclusive as an additive and has an average crystal size ≤ 2 μm, and a relative density higher than 99.95% with a real in-line transmission RIT $\geq 30\%$, as recited in independent claim 1.

At most, the *Yamamoto* patent discloses three test pieces with ZrO_2 additives at 0.05, 2.60, and 7.30 mol% ZrO_2. Test piece 12 as shown on Tables 5-8 has an additive amount of 0.05 mol% ZrO_2, a relative density after HIP of 100.0%, and a grain size of 0.48 μm. *See* Tables 5 and 6. Test piece 28 as shown on Tables 9-10 has an additive amount of 2.60 mol% ZrO_2, a relative density after HIP of 99.8%, and a grain size of 1.5 μm. *See* Tables 9 and 10. Test piece 29 as shown on Tables 9-10 has an additive amount of 7.30 mol% ZrO_2, a relative density after HIP of 99.8%, and a grain size of 1.0 μm. *See* Tables 9 and 10.

Independent claim 1 is not anticipated by the *Yamamoto* patent under 35 U.S.C. §102(a or e). None of the test pieces have a ZrO_2 concentration from 0.1 to 0.5 wt-% ZrO_2 inclusive as recited in independent claim 1. Test pieces 28 and 29 have relative densities less than the 99.95% recited in independent claim 1.

Independent claim 1 is also not obvious in light of the *Yamamoto* patent under 35 U.S.C. §103(a). Although the *Yamamoto* patent discloses addition of other metals at various concentrations, the performance of the other metals varies from metal to metal and cannot be used to make conclusions about the performance of ZrO_2. For example, test specimens 10 and 11 have different metal additives, but have the same additive concentrations and specimen preparation. Test specimens 10 with a Y_2O_3 additive has a linear transmittance of 42%, while test specimen 11 with a Yb_2O_3 additive has a linear transmittance of 27%. *See* Table 6. Thus, the performance of one metal as an additive at a certain concentration fails to suggest use of another metal, particularly Zr, at the same concentration.

The *Yamamoto* patent also teaches away from use of ZrO_2 at a concentration above 0.05 mol%. The *Yamamoto* patent discloses test specimens 12, 28, and 29 with ZrO_2 concentrations of 0.05, 2.60, and 7.30 mol% ZrO_2, respectively. The total transmittance for test specimens 12, 28, and 29 decreases with increasing ZrO_2 concentration from 73% to 25% to 2%, respectively. *See* Tables 6 and 10. Thus, the data of the *Yamamoto* patent suggests that increasing the ZrO_2 concentration decreases the transmittance and the desirability of the translucent polycrystalline ceramic.

Claims 2-9 depend directly or indirectly from independent claim 1 and so include all the elements and limitations of independent claim 1. The Applicants therefore respectfully submit that dependent claims 2-9 are allowable over the *Yamamoto* patent for at least the same reasons as set forth above with respect to independent claim 1.

Withdrawal of the rejection of claims 1-9 under 35 U.S.C. §102(a or e) as being anticipated by or, in the alterative, under 35 U.S.C. §103(a) as being obvious over the *Yamamoto* patent is respectfully requested.

B. Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over the *Yamamoto* patent in view of U.S. Patent No. 5,028,362 to Janney, *et al.* (the *Janney* patent).

The Applicants respectfully assert that *Yamamoto* and *Janney* patents, alone or in combination, fail to teach or suggest all the claim limitations of claim 10. As discussed in Section A above, the *Yamamoto* patent fails to disclose, teach, or suggest polycrystalline alumina components that contain a concentration from 0.1 to 0.5 wt-% ZrO_2 inclusive as an additive and has an average crystal size ≤ 2 μm, and a relative density higher than 99.95% with a real in-line transmission RIT $\geq 30\%$, as recited in independent claim 1. The *Janney* patent also fails to disclose, teach, or suggest these elements. Claim 10 depends indirectly from independent claim 1 and so includes all the elements and limitations of independent claim 1.

The Applicants therefore respectfully submit that dependent claim 10 is allowable over the *Yamamoto* and *Janney* patents for at least the same reasons as set forth above with respect to independent claim 1.

Withdrawal of the rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over the *Yamamoto* patent in view of the *Janney* patent is respectfully requested.

New Claims

Claims 11-14 have been added herein to more particularly point out and distinctly claim the Applicants' invention. Claims 11-14 are allowable over the cited references for at least the reasons discussed above for claims 1-10. Support for claims 11-14 can be found at page 4, lines 1-13. No new matter has been added with the addition of claims 11-14.

SUMMARY

Reconsideration of claims 1-10 and consideration of claims 11-14 is respectfully requested in light of the remarks herein. The Applicants submit that claims 1-14 fully satisfy the requirements of 35 U.S.C. §§102, 103, and 112. In view of foregoing remarks, favorable consideration and early passage to issue of the present application are respectfully requested.

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Respectfully submitted,

/FRANK C. NICHOLAS/

FRANK C. NICHOLAS
Registration No. (33,983)
Attorney for Applicants

CARDINAL LAW GROUP
1603 Orrington Avenue, Suite 2000
Evanston, IL 60201
(847) 905-7111